

REMARKS

Claims 10-14, 18-22, and 26-29 are pending in the present Application. Claim 10 has been amended, claims 1-9, 12-17, and 20-25 have been cancelled, and claims 26-29 have been withdrawn, leaving claims 10, 11, 18, and 19 for consideration upon entry of the present Amendment.

Support for the amendment to claim 10 can be found at least claim 12 as originally filed and in p. 7, line 23 of the specification as originally filed.

Reconsideration and allowance of the claims are respectfully requested in view of the above amendments and the following remarks.

Claim Rejections under 35 U.S.C. § 112, first Paragraph

Claims 10-11, 14, 18-19, and 22 stand rejected under 35 U.S.C. § 112, first paragraph as allegedly containing subject matter which was not described in the specification in such a way as to reasonably convey to one of ordinary skill in the art that the inventor, at the time the application was filed, had possession of the claimed invention. In making the rejection, the Examiner states that the specification, while being enabling for the oxidation initiation potential of the additives iii) and iv) being 4.2-5.3V, does not provide enablement for the oxidation initiation potential of the additives iii) and iv) being 4.2V or higher, and states that an upper range is missing from the claims. Office action of August 10, 2011, p. 4.

Claim 10 has been amended to recite, *inter alia*, an oxidation initiation potential of 4.2-5.3 V. Also, claim 22 has been cancelled herewith.

For at least the reasons that claim 10 is enabled in the specification, as stated by the Examiner, and because claim 22 has been cancelled, the Applicants respectfully overcome the rejection by amendment.

Reconsideration, withdrawal of the rejection of claims 10-11, 14, 18-19, and 22 under 35 U.S.C. § 112, first paragraph, and allowance of the instant claims are respectfully requested.

Claim Rejections under 35 U.S.C. § 103(a)

Claims 10-14, and 18-22 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Mori (JP 2003-308875, hereinafter “Mori”) as stated on pp. 4-6 of the Office action dated August 10, 2011. The Examiner states that Mori teaches all of the elements of claims 10-14, and 18-22 except for specifically teaching that the first additive is specifically a biphenyl ... and the second additive is specifically cumene and states that it would have been obvious to use both additives in the electrolyte taught by Mori. Office action of August 10, 2011, p. 5-6. The Applicants respectfully traverse these rejections for at least the following reasons.

For an obviousness rejection to be proper, the Examiner is expected to meet the burden of establishing why the differences between the prior art and that claimed would have been obvious. (MPEP 2141(III)) “A patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *KSR Int’l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1741 (2007). To find obviousness, the Examiner must “identify a reason that would have prompted a person of ordinary skill in the art in the relevant field to combine the elements in the way the claimed new invention does.” *Id.*

Amended claim 10 recites a nonaqueous electrolyte comprising (i) a lithium salt; (ii) an electrolyte solvent; (iii) a first additive with an oxidation potential of 4.2-5.3 V; and (iv) a second additive compound with an oxidation potential of 4.2-5.3 V, which is higher in oxidation initiation potential than the first additive, and which deposits oxidative products or forms a polymer film upon oxidation, and wherein the first additive and the second additive are respectively biphenyl and isopropylbenzene; vinylbenzene and ethylbenzene; toluene and t-butylbenzene; mesitylene and bromoethylbenzene; or furan and fluorobiphenyl.

References to Mori are to the machine translation provided by the Examiner. Also, if the Examiner maintains a rejection over Mori, the Applicants respectfully request that the Examiner provide a full English translation of Mori so that the record is clear.

Mori teaches a nonaqueous secondary battery that “comprises a nonaqueous electrolyte containing at least one type selected from a sultone compound, cyclic sulfate, and vinylene carbonate and at least one type selected from an alkyl benzene derivative having

tertiary carbon neighboring phenyl groups, a cycloalkyl benzene derivative, and a biphenyl derivative.” Mori, Abstract.

However, although the machine translation suggests that Mori discloses that the nonaqueous electrolyte contains at least one type selected from an alkyl benzene derivative having tertiary carbon neighboring phenyl groups, a cycloalkyl benzene derivative, and a biphenyl derivative, only one type selected from the foregoing derivatives is used in the Examples of Mori.

Because Mori does not disclose any examples using more than one type of additive, one of ordinary skill in the art would not have been prompted by Mori, or have had a reasonable expectation of success, modifying Mori as suggested by the Examiner.

Regarding a reasonable expectation of success, the Board, has recently reiterated that:

to have a reasonable expectation of success, one must be motivated to do more than merely [] vary all parameters or try each of [the] numerous possible choices until one possibly arrive[s] at a successful result, where the prior art gave either no indication of which parameters were critical or no direction as to which of many possible choices is likely to be successful.

Ex parte Varanasi et al., Appeal No. 2010-004322, BPAI, (March 21, 2011), citing *Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1365 (Fed. Cir. 2007).

Thus for at least the reason that Mori does not disclose any examples using more than one type of additive, Mori fails to teach, suggest, or provide a reasonable expectation of success to include the specific combination of the first additive and the second additive claimed by the Applicants, i.e., wherein the first additive and the second additive are respectively biphenyl and isopropylbenzene; vinylbenzene and ethylbenzene; toluene and t-butylbenzene; mesitylene and bromoethylbenzene; or furan and fluorobiphenyl, as recited in amended independent claim 10, in a nonaqueous electrolyte.

Further, Mori discloses that the nonaqueous secondary battery with excellent high-temperature safety would be provided only in the case wherein the nonaqueous secondary battery comprises a nonaqueous electrolyte containing at least one type selected from a sultone compound, cyclic sulfate, and vinylene carbonate and at least one type selected from an alkyl

benzene derivative having tertiary carbon neighboring phenyl groups, a cycloalkyl benzene derivative, and a biphenyl derivative at the same time. Mori, p. 10, [0074].

Furthermore, the Applicants respectfully assert that the synergistic results disclosed by the Applicants further support the patentability of the instant claims. For example, the Applicants disclose in Examples 6 to 11 the results using the additives isopropylbenzene, vinylbenzene, toluene, mesitylene, and furan with biphenyl, ethylbenzene, t-butylbenzene, bromoethylbenzene, and fluorobiphenyl, respectively. Specification, p. 22, Table 4. For at least the reason that Mori does not teach or suggest the foregoing combinations, let alone the unexpected results disclosed by the Applicants, one of ordinary skill in the art would not have been prompted by Mori to consider the claimed nonaqueous electrolyte solution.

Accordingly, Mori does not render obvious amended independent claim 10. Claims 11, and 18-19 ultimately depend from claim 10, and thus include the allowable elements of claim 10. Thus the dependent claims are patentable over the cited references for at least the reasons given above for independent claim 10.

Accordingly, reconsideration, withdrawal of the rejection of claims 10-14 and 18-22 under 35 U.S.C. § 102(b), or in the alternative under 35 U.S.C. § 103(a), and allowance of the instant claims are respectfully requested.

Conclusion

It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and withdrawal of the rejections and allowance of the claims are respectfully requested.

Applicants hereby petition for any necessary extension of time required under 37 C.F.R. 1.136(a) or 1.136(b) or any other necessary fees(s), which may be required for entry and consideration of the present Reply.

If there are any additional charges due with respect to this Amendment or otherwise, please charge them to Deposit Account No. 06-1130 maintained by Applicants' Attorneys.

Respectfully submitted,

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